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the Prevention of Prostate Cancer

PRINCIPAL INVESTIGATOR: Dr. Cynthia A. Warrick

CONTRACTING ORGANIZATION: Howard University
Washington, DC 20059

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Dr. Cynthia A. Warrick

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)Howard University
Washington, DC 20059E-Mail : cwarrick@howard.edu**8. PERFORMING ORGANIZATION
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The purpose of this study is to determine if and how pharmacists can play a significant part in the prevention of prostate cancer. The study is divided into three phases. Phase 1 (Year 1) involved the identification of community pharmacists who are willing to serve as health educators on prostate cancer in the community-pharmacy setting. A cover letter, two questionnaires and stamped return addressed envelopes were mailed to 150 randomly selected pharmacies in the Washington, D.C. area (D.C. and P.G. County Maryland). Additionally, pharmacies located in predominantly African American zipcodes were also mailed questionnaires to make a total of 192. Pharmacists who respond to the survey and indicate a willingness to become prostate cancer health educators, will be chosen to participate in phases II and III of the study. Following the initial mailing, 24 surveys were returned. Follow-up phone calls, pharmacy visits, and a second mailing of 50 produced a total return of Ninety-one (91) questionnaires. Out of the 91 returned surveys, 31 pharmacists indicated they would participate in the prostate cancer education/training program. These pharmacists will be contacted to participate in Phase 2 of the project.

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Annual Report 2000-2001
Award No: DAMD17-00-1-0082
"Pharmacists as Health Educators and
Risk Communicators in the Prevention of Prostate Cancer"

Introduction

The research study, "Pharmacists as Health Educators and Risk Communicators in the Prevention of Prostate Cancer" is a prostate cancer education for prevention project. The principle investigator is Cynthia Warrick, Assistant Professor, Department of Clinical & Administrative Pharmacy Sciences, School of Pharmacy, Howard University. This study proposes to define how pharmacists can play an integral role in the early detection and prevention of prostate cancer. The specific aims of this research study are: 1. To identify community pharmacists who are willing to serve as health educators and risk communicators on prostate cancer; 2. To design a program to educate and train pharmacists in risk communication and prostate cancer; and 3. To design a format whereby pharmacists are able to perform health education on prostate cancer in the community pharmacy setting. This study will be conducted in three phases: Phase I is the development, administration, and evaluation of a survey instrument that will assess pharmacists' willingness to counsel on prostate cancer, their present knowledge about prostate cancer, their interests in education programs on prostate cancer, and the feasibility of conducting public education in the community pharmacy setting. Phase II is the design, pilot testing, and evaluation of a prostate cancer education and communication program that will be used to educate pharmacists on prostate cancer and how this information should be communicated to the public. It will involve videotaped lectures that can be viewed through television and computer formats. Phase III is the design, testing, and evaluation of the prostate cancer implementation program. This part of the study consists of a Workgroup that will design how the program should be implemented in the pharmacy for maximum effectiveness and feasibility. It involves the design of an educational videotape that will be shown to the public during the counseling session. The workgroup will also design the educational materials that will be distributed to the public. All media products will be designed to reflect sensitivities to cultural diversity. It is expected that the products of this study would be utilized in a national effort on prostate cancer prevention.

Body

The Phase 1 tasks identified in the approved Statement of Work included:

Task I: Survey Plan, Months 1-9:

- Identify students and faculty that will participate in the study
- Design survey instrument
- Test survey instrument
- Develop sampling frame
- Select random sample of pharmacies
- Mail survey instrument
- Follow-up phone calls
- Receipt of surveys
- Evaluate survey
- Report on Phase I

The principal investigator (PI) identified 2 students, 1 clerical staff person, 1 faculty researcher/consultant, and 1 prostate cancer consultant to assist with accomplishing the Phase 1 tasks. Dr. Anthony Wutoh designed the prostate cancer survey instrument. The survey instrument consisted of 29 questions. The first 10 questions were true/false and were designed to assess the pharmacists' current awareness regarding prostate cancer. Questions 11 through 19 were designed using a Likert scale and consisted of questions to assess the pharmacists' perception of barriers and benefits to prostate cancer education and counseling. Questions 20 through 29 queried information about the pharmacists' demographic data and the pharmacy settings.

Research students, Anthony Emekalam and Zakia Corria, gathered the pharmacy and demographic data for Washington, DC, and Prince George's County, Maryland. They contacted the Maryland and D.C. State Boards of Pharmacy for pharmacy location information. They contacted the State health departments to collect prostate cancer data. For Maryland, they were only able to get county level data, however, for the District of Columbia, they collected prostate cancer incidence by zipcode. Demographic data from the 1990 Census, for the District and P.G. County, were obtained from the U.S. Bureau of Census website. All of the data collected on the pharmacies and demographics were used to develop Excel databases. These data were entered into the ArcView GIS software program. This software enabled the spatial representation of the datasets. Maps created from the D.C. data can be found in the Appendix. The maps were used to target pharmacies that were located in African American predominant zipcodes, in order to ensure participation from pharmacists who served the most at-risk patients.

Mrs. Evelyn Llamas is the clerical assistant for this project. She ordered all of the supplies for the project, assisted with the mailing, and she handled all of the university accounting procedures for payroll and accounts payable.

The 192 questionnaires were mailed on January 12, 2001, with an expected response to occur by January 26, 2001. After 3 weeks, only 24 surveys were returned by mail. The research students followed-up the mailing with telephone calls, telephone surveys, and on-site pharmacy visits beginning on February 15. A second mailing was conducted on March 15. A total of 91 questionnaires had been returned; one of the questionnaires, however, did not have any answers marked. Out of the 91 responses, 31 of the pharmacists polled indicated that they would like to participate in the prostate cancer education and training program. These pharmacists will be contacted in Phase 2.

In preparation for Phase 2, Pat Sims, a prostate cancer specialist, was contracted to develop the content for the prostate cancer educational lecture. She was only able to complete half of the assignment, and her remaining duties in Phase 1 and Phase 2 have been taken over by the Howard University School of Pharmacy Oncology Fellow, Dr. Kimberly Dinh. Dr. Dinh will continue the development of the lecture where Ms. Sims left off.

Preliminary Study Findings

There were ninety (90) respondents to the questionnaire. However, several respondents did not answer every question provided. The demographic characteristics of the sample are listed in Table 1 in the Appendix.

Perception Variables

Perceived benefits of providing prostate cancer information represents the degree to which respondents believe there are positive outcomes of providing prostate cancer information to their patients. Perceived benefits were measured through five questionnaire items using Likert-style statements with responses ranging from Strongly Agree to Strongly Disagree. Strongly agree responses are valued at one and strongly disagree responses are valued at five. The perceived benefits scale was summed over the five items, with a possible score range of 5 to 25. A lower score indicated a greater perceived benefit of providing prostate cancer information. The Cronbach's Alpha Coefficient for this scale was determined to be 0.8511, supporting that this was a very reliable scale.

Perceived barriers of providing prostate cancer information represents the degree to which respondents believe there are barriers associated with providing prostate cancer information to their patients. Perceived barriers were measured through four questionnaire items using Likert-style statements with responses ranging from Strongly Agree to Strongly Disagree. Strongly agree responses were valued at one and strongly disagree responses were valued at five. The perceived benefits scale will be summed over the five items, with a possible score range of 4 to 20. The Cronbach's Alpha Coefficient for this scale was determined to be 0.7431, supporting that this was a very reliable scale.

Variables Assessed in the statistical analyses included:

Gender, Ethnicity, Age, Number of Years in practice, education, number of pharmacists staffing the store, number of technicians staffing the store, type of pharmacy, whether Disease State Management programs are offered in the pharmacy, perceived benefits of providing prostate cancer information, perceived barriers of providing prostate cancer information, and knowledge of prostate cancer

Bivariate Analyses

Knowledge Score

In bivariate analyses, knowledge of prostate cancer information was not significantly related to any demographic characteristic, or either of the perception scales (Benefits or Barriers).

Perceived benefits of providing prostate cancer information score (Benefits)

In bivariate analyses, the following variables were significant predictors of Benefits:

Variable	Category Score (Benefits)		P value
Disease State Management Programs offered in the pharmacy	Yes	10.4	0.022
	No	8.2	
Race (Black versus Non-Black respondents)	Black	8.3	0.011
	Non Black	10.5	
Gender (Male versus Female)	Male	7.9	0.005
	Female	10.5	
Barriers	Continuous		0.0001

A lower score indicated a greater perceived benefit of providing prostate cancer information.

Perceived barriers of providing prostate cancer information (Barriers)

In bivariate analyses, the following variables were significant predictors of Barriers:

Variable	Category Score (Benefits)	P value
Benefits	Continuous	0.0001

Multiple Regression Analyses

Multiple regression models were developed to assess significant predictors of prostate cancer knowledge, Barriers, and Benefits in a regression model (Forward regression method).

Knowledge

There were no significant predictors of prostate cancer knowledge.

Benefits

The following variables remained in the forward regression model for Benefits:

Variable	R Square	Adjusted R Square	Beta	P value
Gender	.112	.100	2.985	.0001
Ethnicity (Black vs. Non Black)	.224	.203	-2.561	.003
Prescription Volume (>200 prescriptions vs. <199 prescriptions daily)	.267	.236	-1.901	.022
Disease State Management Programs (Yes vs. No)	.311	.272	-1.745	.037

Interpretation: The most significant predictor of perceived benefits of providing prostate cancer information was gender, as male pharmacists perceived greater benefits for providing information than female pharmacists. Similarly, black pharmacists perceived greater benefits of providing prostate cancer information to their patients than non-black pharmacists. Pharmacists in stores with a daily prescription volume greater than 200 perceived greater benefits of providing prostate cancer information than pharmacists in stores with a daily prescription volume less than 200. Finally, pharmacists who were in stores that did not provide Disease State Management Programs perceived greater benefits for the provision of prostate cancer information than pharmacists who were in stores that did provide Disease State Management Programs.

Barriers

There were no significant predictors of Barriers to providing prostate cancer information.

Key Research Accomplishments

- Pharmacy Databases for Washington, DC and P.G. County Maryland
- GIS for Pharmacy Databases in Washington, DC and P.G. County Maryland
- Prostate Cancer Data for Washington, DC and P.G. County Maryland

- List of Pharmacists interested in participation in the Prostate Cancer Project
- Assessment of Pharmacists awareness and interest in Prostate Cancer Education

Reportable Outcomes

- Presentation to Faculty of the University of Texas School of Public Health, Houston, TX, 3/22/2001.

Conclusions

Phase 1 of the "Pharmacists as Health Educators and Risk Communicators in the Prevention of Prostate Cancer" was successful in completing all of the Tasks in the approved statement of work. It is anticipated that Phase 2 will also progress on schedule. The accomplishments in Phase 1 are currently being documented in a proposal to TAP Pharmaceuticals to evaluate the pharmacists' education project as well as other prostate cancer preventive interventions. An abstract has also been submitted for presentation at the CDC Cancer Conference scheduled for September 2001 in Atlanta, GA. If successful, these activities will be reported in the next annual report.

The findings in Phase 1 of this study concluded that pharmacists are willing to participate as health educators and risk communicators in the prevention of prostate cancer. Pharmacists also believe that by providing this information to their patients that they will be providing benefits. One-third of the pharmacists that responded to the survey indicated a willingness to participate in the development of the education/training program (Phase 2) of the project.

So what does this Mean? The results indicate pharmacists recognize that by becoming experts on prostate cancer, they can provide a valuable service to their patients and community. This project will serve as a model for national distribution of prostate cancer education for community pharmacists.

References

No new references were utilized.

Appendices

Table 1 – Study Characteristics

Table 2 – Study Variables

Maps

- 1989 Median Income by Zipcode, Washington, DC
- 1989 Median Income by Zipcode, DC Pharmacy Locations
- 1999 DC Population by Zipcode, DC Pharmacy Locations
- 1999 Prostate Cancer in White Males by Zipcode, Wash., DC
- 1999 Prostate Cancer in Black Males by Zipcode, Wash., DC

C.V. for Dr. Anthony Wutoh

C.V. for Dr. Cynthia Warrick

APPENDIX

Table 1. Demographics Characteristics (N=100)

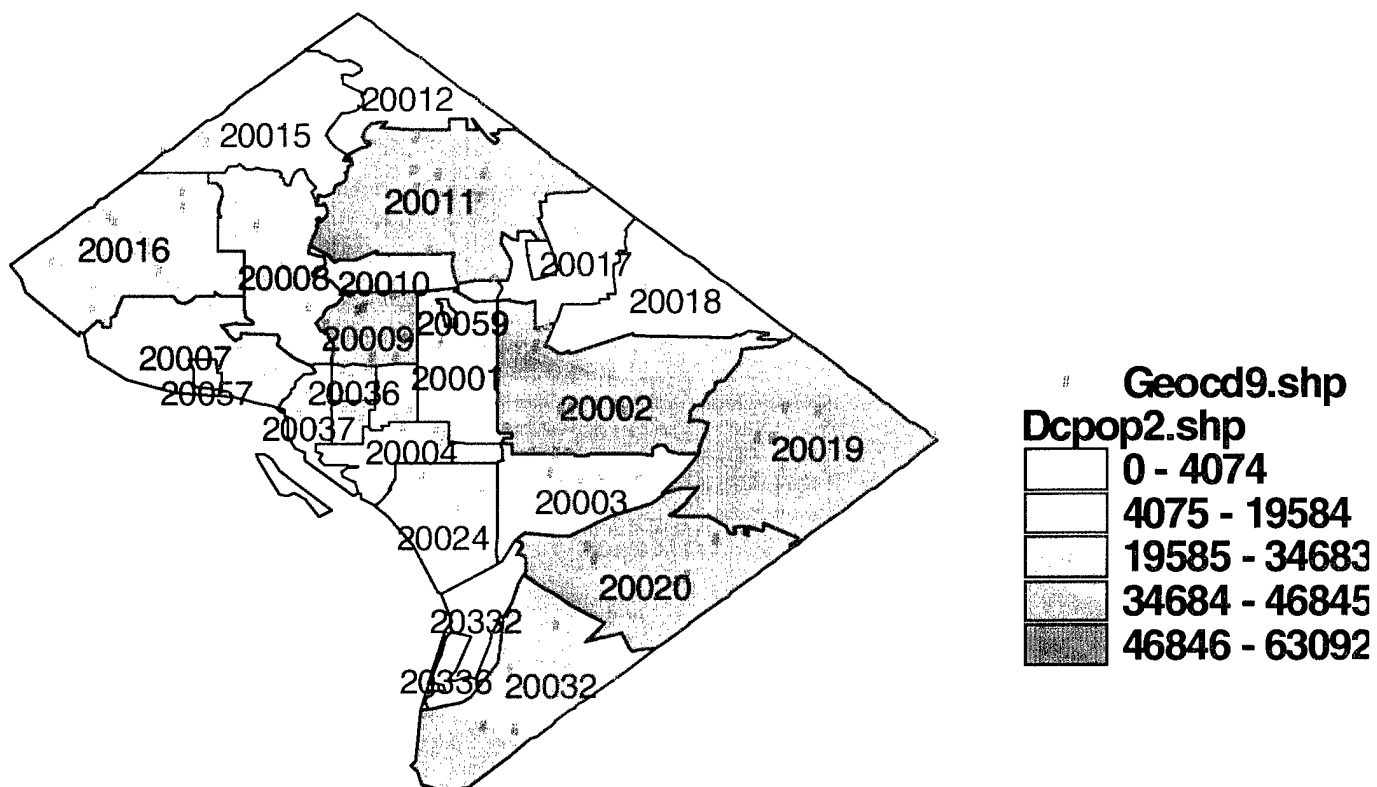
	Frequency	Percent	Mean ± SD
Gender			
Male	50	54.9%	
Female	39	42.9%	
Did not respond	1	1.0%	
Ethnicity			
Black (Non-Hispanic)	55	60.4%	
White (Non-Hispanic)	26	28.6%	
Hispanic	2	2.2%	
Asian/Pacific Islander	4	4.4%	
Native American/Alaska Native	1	1.1%	
Other/Did not respond	2	2.2%	
Education			
Bachelor's Degree (B.S. Pharmacy)	63	69.2%	
Doctorate (Pharm.D.)	19	20.9%	
Doctorate (Ph.D.)	3	3.3%	
Other/Did not respond	5	5.5%	
Prescription Volume of the store			
Less than 50 prescriptions daily	3	3.3%	
50-99 prescriptions daily	8	8.8%	
100-199 prescriptions daily	45	49.5%	
200-299 prescriptions daily	19	20.9%	
Greater than 300 prescriptions daily	10	11.0%	
Did not respond	5	5.5%	
More than one pharmacist staffing during busy periods			
Yes	32	35.2%	
No	48	52.7%	
Sometimes	9	9.9%	
Did not respond	1	1.1%	
Number of technicians staffing during busy periods			
None	6	6.6%	
One	50	54.9%	
More than One	33	36.3%	
Did not respond	1	1.1%	
Type of Pharmacy			
Chain Pharmacy	37	40.7%	
Privately owned Community Pharmacy	28	30.8%	
Food Store Pharmacy	9	9.9%	
Other/Did not respond	16	17.6%	
Does this pharmacy conduct Disease State Management Programs			
Yes	34	37.4%	
No	55	60.4%	
Did not respond	1	1.1%	
Age of Pharmacist (years)			43.7 ± 9.60

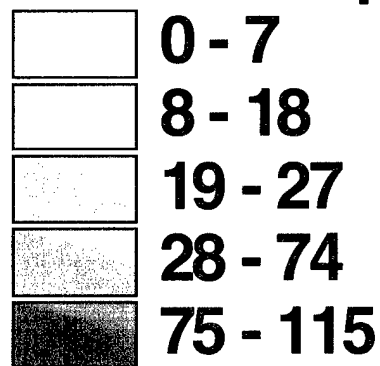
Table 2. Study Variables (N=90)

	Frequency	Percent	Mean \pm SD	Reliability
Knowledge Score (Ten true/false items) Possible scores could range from 0 to 10.			7.90 \pm 1.3	
*Perceived benefits of providing prostate cancer information (5 items) Possible scores could range from 5 (Strongly Agree) to 25 (Strongly Disagree). Lower scores indicated greater perceived benefits Based upon 86 complete responses			9.0 \pm 3.91	0.8511
*Perceived barriers of providing prostate cancer information (4 items) Possible scores could range from 4 (Strongly Agree) to 20 (Strongly Disagree). Lower scores indicated greater perceived barriers. Based upon 71 complete responses			13.72 \pm 3.94	0.7431

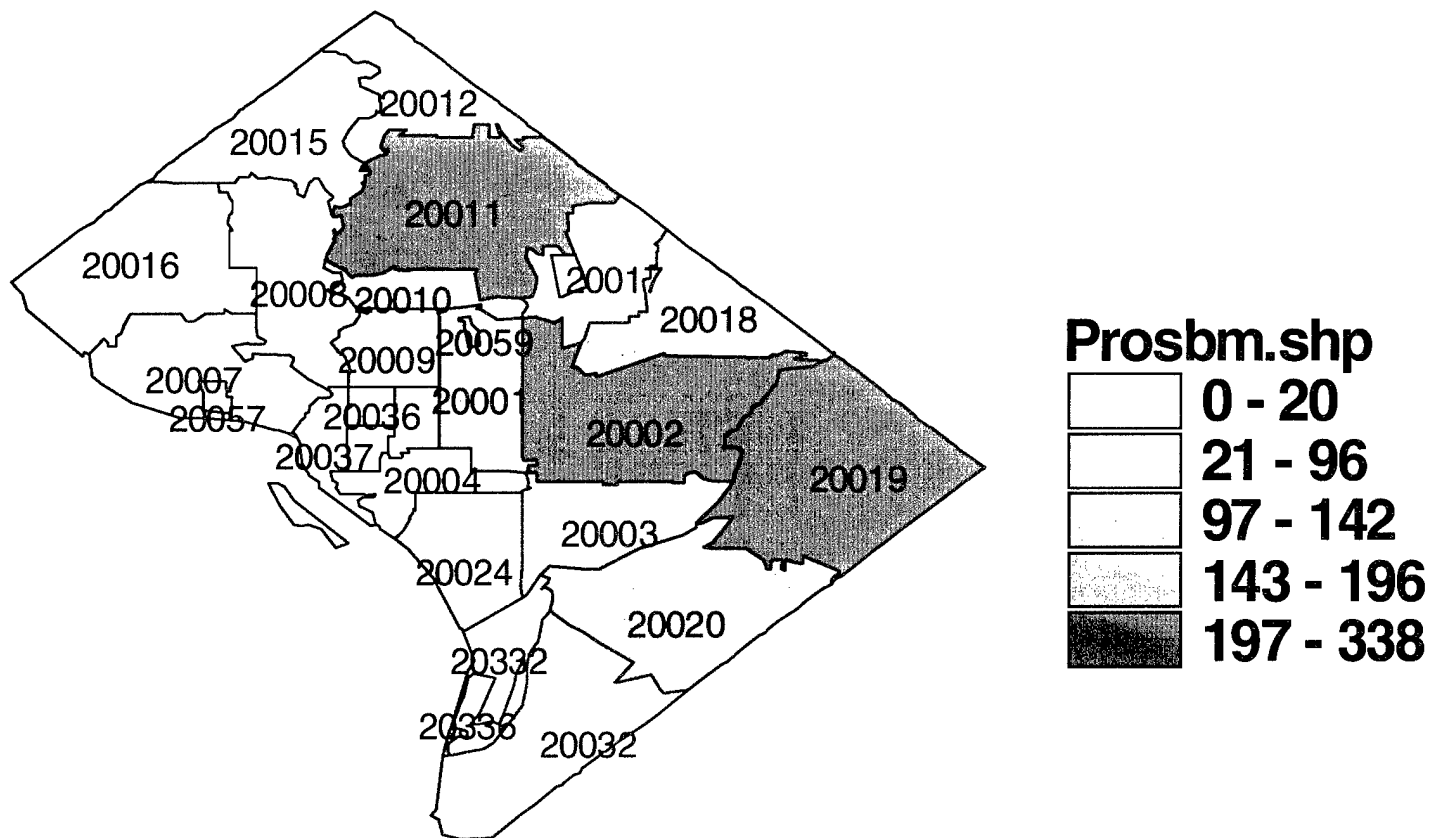
^AThese variables were measured on a 5-point Likert-type scale anchored by (1) strongly agree and (5) strongly disagree.

1999 DC Population by Zipcode & Pharmacies





1999 Prostate Cancer in Black Males by Zipcode Washington, DC



CURRICULUM VITAE

ANTHONY K. WUTOH, Ph.D., R.Ph.

POST OFFICE BOX 23650

BALTIMORE, MD 21203

(410) 922-6839

awutoh@howard.edu or awutoh@hotmail.com

EDUCATION:

- 1990-1996 University of Maryland, Graduate School
Baltimore, Maryland
Doctor of Philosophy: Pharmacy Practice & Administration
Minor Area of Study, Pharmacoepidemiology,
Dissertation Title: The role of sociodemographic variables on access to ganciclovir
and foscarnet therapy for AIDS patients in the treatment of Cytomegalovirus retinitis
- 1996-(Sum.) Johns Hopkins University, School of Public Health
Baltimore, Maryland
Outcomes Research (Summer Program in Epidemiology)
- 1987-1990 University of Maryland, School of Pharmacy
Baltimore, Maryland
Bachelor of Science: Pharmacy
- 1982-1987 University of Maryland, Baltimore County
Catonsville, Maryland
Bachelor of Arts: Biochemistry

EXPERIENCE:

- 1996-Present ASSISTANT PROFESSOR, Co-Program Director: Center of Excellence
Department of Clinical and Administrative Pharmacy Sciences,
College of Pharmacy, Nursing, & Allied Health, Howard University. Washington, D.C.
Graduate School of Arts & Sciences, Howard University. Washington, D.C.
- Responsibilities include instruction of undergraduate and professional
and graduate students, development of research program, public service, and
publication in refereed journals. Other responsibilities include
participation in College, as well as University-wide committees.
- 1994-1996 PROJECT DIRECTOR
Center for AIDS Services Planning and Development, AIDS Administration
Maryland Department of Health and Mental Hygiene. Baltimore, Maryland
- Responsibilities included data base management, the development of analytic
files, coordination of research activities of various staff members, and the
development and analysis of research activities.

1990-1996 PEDIATRIC STAFF PHARMACIST
University of Maryland Medical System
Baltimore, Maryland

- Experience in centralized/decentralized/night pharmacy services. Responsibilities included monitoring drug usage emphasizing appropriate medication utilization and cost effectiveness, daily medication cart checking, staff inservices, discharge counseling, medication preparation and dispensing, drug information and pharmacokinetics.

1993-1994 GRADUATE POLICY INTERN (Volunteer)
United States Senate Special Committee on Aging
Washington, District of Columbia

- Responsibilities included researching the impact of health care reform on the pharmaceutical and biotechnology industries, assessing the cost differences between branded and generic pharmaceuticals, and evaluating the economic impact of prescription drug prices on the elderly.

HONORS AND AWARDS:

Howard University Excellence Award *Outstanding Pharmacy Faculty* (1998)
Howard University Merit Award (1997, 1998, 1999)
University of Oklahoma Faculty Leadership Institute Fellow (1996)
Rho Chi Honor Society (1992)
Outstanding Young Men of America (1990)
Lois Young Thomas Scholarship Guild (1990)
Alpha Phi Alpha Man of the Year (1985)
SGA Senator of the Year (1984)

PROFESSIONAL AFFILIATIONS:

Journal of Pharmacy Teaching: Reviewer, 2000
Journal of the National Medical Association: Reviewer 2000
Clinical Therapeutics: Reviewer 1997
Federal Ryan White Act, Title I and Title II Grant Reviewer 1997-1998
Maryland AIDS Drugs Assistance Program (MADAP) Advisory Board 1995 -
American Pharmaceutical Association 1991 -
American Society of Health System Pharmacy 1992 -
National Pharmaceutical Association 1990
Maryland Society of Hospital Pharmacists 1990 - 1993
Maryland Pharmacist Association 1990 - 1991
Maryland Higher Education Commission: Student Advisory Board 1988 - 1990
Alpha Phi Alpha Fraternity, Incorporated 1983 -

LICENSURE:

Registered in Maryland

TEACHING ACTIVITIES

Drug Information & Toxicology (Spring, 1999-2000) Ninety Pharm.D. students, responsibilities included lecturing, and advising students regarding grading, and developing examination questions.

Drugs & the Elderly (Spring, 1998-2000) Sixty Pharm.D. students, responsibilities included lecturing, and advising students regarding grading, and developing examination questions.

Research in Clinical & Administrative Pharmacy (Spring, 1998-2000) Five Pharm.D. Students; responsibilities included developing course, serving as course master, lecturing, management of attendance records, and advising students regarding grading, research projects, and research proposals.

Drugs & Society (Fall, 1996-2000) Eighty Pharm.D. students; responsibilities included developing course, serving as co-course master, lecturing, management of attendance records, and advising students concerning grading and examinations.

Pharmacoepidemiology (Spring, 1997-2000). Eighty Pharm. D. students; responsibilities included developing course, serving as co-course master, lecturing, management of attendance records, and advising students concerning grading and examinations.

Pharmacy Management (Spring, 1996-2000) Eighty-five Pharm.D. students; responsibilities included serving as course master, management of attendance records, and advising students concerning grading and examinations.

Principles of Research (Spring, 1997-2000) Sixty Pharm.D. students; responsibilities included lecturing, developing examinations questions, and advising students concerning grading and examinations.

Pharmacy & US Health Care System (Spring, 1997-2000) Seventy Pharm.D. students; responsibilities included lecturing, management of attendance records, and advising students concerning grading and examinations.

Contemporary Pharmacy (Spring, 1996-2000). Ninety Pharm.D. students; responsibilities included lecturing, management of attendance records, and advising students concerning grading and examinations.

PUBLICATIONS

Ayuk-Egbe P, Wutoh AK, Hailemeskel B, Bernard D, Clarke-Tasker V. A survey of nurses' knowledge and attitudes regarding herbal therapies. Issues of Interdisciplinary Care, National Academy of Practices Forum. 2000;2(3):191-194.

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Wutoh AK, Nong VN, Carson RE, Curry CE, Hogue V. A retrospective analysis of prescribing errors and community pharmacists interventions. Accepted with revisions in **The Journal of Pharmaceutical Care**. November, 1998.

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Suk E, Chang R, Poirier S, **Wutoh AK**, Zimmerman A. A drug use evaluation of cefuroxime at a large university hospital. **Journal of The American Society of Hospital Pharmacists.** January, 1991.

PRESENTATIONS

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Wutoh AK. Global African Futures Summit World Planning Conference. Invited panelist and Moderator of Health Panel. "Promoting sexual responsibility, preventing the spread of AIDS & STDs." Dakar, Senegal, August 20-26, 2000.

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Jones T, **Wutoh AK**, Brown C, Alie N, Burris KR, Powell N. Adherence to prescribed antiretrovirals among older HIV infected adults. Merck Pharmacy Student Research Conference. October 30-31, 1999. Morgantown, West Virginia.

Wutoh AK, Aidoo R. Moderator; Health-HIV subsection. The development of a comprehensive AIDS education program for developing African nations. African/African-American Summit. May 17-21, 1999. Accra, Ghana.

Wutoh AK, Pippalla R, Alie N, Ofosu E, Mantri M. Compliance in HIV-positive patients. Invited Lecturer: National Council on Patient Information and Education 12th National Conference on Medication Communication. Washington DC. May 12-14, 1999.

Wutoh AK. Guest Presenter: Faculty Mentoring in the School of Law. Howard University, School of Law. December 3, 1998.

PRESENTATIONS CONTINUED

Wutoh AK. Guest Lecturer: The establishment of a Faculty Mentoring Program in the Division of Nursing, Howard University. December 15, 1998.

Wutoh AK. Pharmacoeconomics, Clinical Outcomes, and Patient Care (Seminar Moderator). Greenbelt, MD. June 5, 1998.

Wutoh AK. Mentoring in an Academic Environment (Workshop Moderator). Howard University, Washington, DC. April 3, 1998.

Wutoh AK. The incidence of AIDS among the elderly in Maryland. Presentation at The American Pharmaceutical Association Annual Meeting, Los Angeles, March, 1997.

Wutoh AK. A characterization of older AIDS patients in Maryland. HIV Study-Tour of Zimbabwe and Kenya. June, 1997. (Invited)

Wutoh AK. "New pharmacologic advances in the treatment of HIV disease." Presentation at the Baltimore Area Episcopal Quality of Life Retreat. Harpers Ferry, West Virginia. August, 1996.

Wutoh, AK. "The role of pharmacy in the U.S. Health Care System." Presentation to Russian scientists at Howard University School of Continuing Education. Washington DC. July, 1996.

Wutoh AK, Rhee W. "Sociodemographic differences in CMV retinitis diagnosis and treatment in Maryland." Presentation at the Maryland AIDS Administration. Baltimore, MD. May, 1996.

Wutoh AK, Hidalgo J, Bareta J, Rhee W, Steidl S, Beardsley R. "Differences in the severity of CMV retinitis at diagnosis". Presentation at the Southern Pharmacy Administration Conference. University of Mississippi, Oxford, MS. May, 1996.

Wutoh AK, Hidalgo J, Bareta J. "The role of race in the treatment of cytomegalovirus retinitis in AIDS patients". Presentation at the American Pharmaceutical Association Annual Meeting. Nashville, TN. March, 1996.

Wutoh AK. "Sociodemographic characteristics and access to treatment for CMV retinitis." Presentation at The Wintergreen Conference for Research in Pharmacy Administration. Wintergreen, Virginia. November, 1994

Mackrill PL, **Wutoh AK.** "Empowerment: Doing more with less through implementation of a Nursing/Pharmacy liaison program." American Society of Hospital Pharmacists Midyear Clinical Meeting. Atlanta,. December 1993.

PRESENTATIONS CONTINUED

Wutoh AK, Beardsley R. "PCATs; How well do they predict the academic success of pharmacy students?" Presentation to University of Maryland, School of Pharmacy Faculty. Baltimore, MD. September, 1993.

Wutoh AK, Chang E, Soucy D, Orsini M, Weidel P. "The establishment of a patient discharge counseling service at a large university hospital." Presentation to Maryland Society of Hospital Pharmacists. Baltimore, MD December, 1993.

Wutoh AK, Speedie S, Michocki RJ, Skarupa S, McNally D, Knapp D. "Incidence of inappropriate prescribing of nonsteroidal antiinflammatory drugs in an elderly population." Presentation at Gerontological Society of America Annual Meeting. Washington, D.C. November, 1992.

Speedie SM, Skarupa SJ, McNally D, **Wutoh AK**, Palumbo F.
"Incidence of Inappropriate prescribing in an elderly population." Center on Drugs and Public Policy. Univ. of MD, School of Pharmacy. December, 1991

Wutoh AK. "Lead paint education and abatement program for landlords."
Prepared for The Coalition Against Childhood Lead Poisoning. Balt. MD. 11/91

RESEARCH & FUNDING EXPERIENCE

11/00 – 11/01 "Protease inhibitor serum levels, adherence & resistance" Funded by a \$73,600 contract from The CDC/Minority Health Professions Foundation. U50/CCU304522-10. Principal Investigator: Anthony K. Wutoh, Ph.D., R.Ph..

9/00 – 8/03 "The development of a Center of Excellence at Howard University, College of Pharmacy, Nursing, and Allied Health." Funded by a \$2,174,381 grant from DHHS, HRSA. 1 D34 HP04069-01. Project Director: Pedro Lecca, Ph.D., Co-Project Director: Anthony K. Wutoh, Ph.D.

05/2000 "Increasing the Entrepreneurial Experience in the Pharmacy Management Course. Funded by a \$2,000 grant from National Collegiate Inventors and Innovators Alliance (NCIIA), Lemelson Foundation. Co- Principal Investigators: Anthony K. Wutoh, Ph.D., R.Ph., Bisrat Hailemeskel, Pharm.D.

01/00 – 12/01 "Seminars in Disease State Management for Pharmacy Students". Funded by a \$4,000 grant from the Fund for Academic Excellence at Howard University. Principal Investigator: Anthony K. Wutoh, Ph.D.

09/99-09/2002 – "Howard University Targeted Provider Education Demonstration Program" Funded by \$1.6 million grant from The Health Resources Services Administration (HRSA). Program Director: Peggy Valentine, Ed.D. Personal role on project: Coordinator of HIV/AIDS Therapy.

FUNDED PROJECTS, Cont.

03/99 – 3/2000 “Risk and treatment behaviors of older HIV+ patients”. Funded by a \$71,000 grant from The National Institute on Aging, National Institutes of Health (NIH). R03 AG16821-01 Principal Investigator: Anthony K. Wutoh, Ph.D.

01/99 – 12/99 “Current Issues in Alternative, Complimentary, and Natural (A-C-N) Medicines”. Funded by a \$3,000 grant from the Fund for Academic Excellence at Howard University. Co-Principal Investigators: Patricia Ayuk-Egbe, Pharm.D., Joseph Ofori, Pharm.D., Anthony K. Wutoh, Ph.D.

03/98 - 3/99 “Student Research and participation at a National Pharmacy Meeting”
The development of a Faculty Mentoring Program at Howard University . Funded by a \$5,000 grant from the Fund for Academic Excellence at Howard University. Principal Investigator: Anthony K. Wutoh, Ph.D.

01/98 - 12/98 “The development of a Faculty Mentoring Program at Howard University”
Funded by a \$5,000 grant from the Fund for Academic Excellence at Howard University. Principal Investigator: Anthony K. Wutoh, Ph.D.

10/96-5/99 “The role of quality of life on medication compliance and survival of AIDS patients.” Funded by \$26,800 grant from Howard University New Faculty Grants Program. Principal Investigator: Anthony K. Wutoh, Ph.D.

4/94 - 4/96 “The Role of Sociodemographic Variables on the Treatment of Cytomegalovirus (CMV) Retinitis in Maryland AIDS Patients”. Funded by \$90,000 contract with Roche Bioscience (Syntex Inc.). Principal Investigator: Julia Hidalgo, Sc.D., Maryland AIDS Administration. Responsibilities included serving as project director, managing the daily operation of the project, directing epidemiologic, markov, and statistical analyses, creating data collection instruments, and preparing manuscripts for submission to peer review journals.

5/93 - 5/94 “PCATS; How well do they predict the academic success of pharmacy students?” Principal Investigator: Robert Beardsley, Ph.D. University of Maryland School of Pharmacy. Responsibilities included creation, and statistical analysis of data files, preparation of manuscripts, and presentation of results.

2/92 - 12/92 "Incidence of inappropriate prescribing of nonsteroidal antiinflammatory drugs in an elderly population." Funded by a \$200,000 grant from AHCPR. Principal Investigator: Stuart Speedie, Ph.D. University of Maryland School of Pharmacy. Responsibilities included preparation of data files for analysis, statistical analysis, and preparation of manuscripts for submission to peer review journals.

PROPOSALS SUBMITTED, BUT NOT FUNDED

11/97 "A Cross-sectional study of medication use in older and elderly HIV+ patients. \$70,000 proposal not funded by the Minority Health Professions Foundation. Co-Principal Investigators: Anthony K. Wutoh, Ph.D., Carolyn M. Brown, Ph.D.

8/96 - 1/97 "The impact of protease inhibitors on survival and costs of Medicaid enrollees with AIDS." \$100,000 proposal not funded by Merck Pharmaceutical Inc. Submitted in conjunction with Maryland AIDS Administration. Co-Principal Investigator: Anthony K. Wutoh, Ph.D. Julia Hidalgo, Sc.D., MPH, MSW

4/97 - 11/97 "The establishment of a patient care pharmacy at the Park-Morton Community Health and Wellness Center." \$1,297,160 (Pharmacy portion of \$30,000,000 University grant) not funded by U.S. Department of Housing and Urban Development. Co-Principal Investigators: (Pharmacy) Anthony K. Wutoh, Ph.D. Olu Olusanya, Pharm.D., Clarence Curry, Pharm.D., Frederic Lombardo, Pharm.D. / Urban Family Institute.

PROPOSALS APPROVED, BUT NOT FUNDED

11/97 "A Study of medication use in older HIV+ patients. \$50,000 proposal submitted to the National Institutes of Health/National Institute on Aging. Co-Principal Investigators: Anthony K. Wutoh, Ph.D., Carolyn M. Brown, Ph.D.

PROPOSALS SUBMITTED, AND UNDER REVIEW

12/99 "HIV Management & Outcomes among HIV-infected older adults" \$1,068,000 proposal submitted to the National Institutes of Health/National Institute on Aging. R01 AG18699-01. Co-Principal Investigator: Carolyn M. Brown, Ph.D.

11/99 "Older African-American's HIV knowledge & risk behaviors" \$70,000 proposal submitted to the National Institutes of Health/National Institute on Aging. R03 AG18638-01 Co -Principal Investigators: Veronica Clarke-Tasker, Ph.D., Carolyn M. Brown, Ph.D.

UNIVERSITY COMMITTEES

Search Advisory Committee for the Dean of the College of Pharmacy, Nursing, Allied Health Sciences 1998 (University Committee)
South Africa Primary Care Development Project: 1996 (University Committee)
Faculty Senate Committee on Appointments, Promotion, and Tenure: 1997- (Univ. Comm.)
International Health Planning Committee: 1996- (University Committee)
Continuing Education Committee 1998- (College Committee)
Faculty Representative; American Association of Colleges of Pharmacy: 1998 (College Committee)
Search Committee for the Chair of the Department of Clinical & Administrative Pharmacy Sciences 1997 (College Committee)
Collaborative Practice Committee 1997 (College/MD Board of Pharmacy)
Ad Hoc Committee to Develop Merger Leadership Statement: Chair 1996 (College Comm.)
Relationships with Foreign Colleges of Pharmacy: Chair 1996- (College Committee)
Financial Aid and Awards : Chair 1998- (College Committee)
Admissions 1996- (College Committee)
Ad Hoc Committee to Develop Joint Pharm.D.-M.B.A. Program: Chair 1998- (College Committee)
Urban Health Initiative: Chair 1996 (Departmental Committee)

CYNTHIA A. WARRICK

Education

B.S. Pharmacy, Howard University, Washington DC, 1975.

- V.P. Pharmacy Student Council, Pharmacy School Executive Board, Pres. Student American Pharmaceutical Association, Alpha Kappa Alpha Sorority, Inc., Who's Who Among Students in American Universities & Colleges.

Graduate Certificate, Hazardous Materials Management, UCLA, 1992.

- Intern-US Department of State, Washington, DC., Intern-United Nations New York, 4th Preparatory Committee Working Group of the Toxic & Hazardous Working Group for the Earth Summit '92, Intern-Los Angeles Regional Water Quality Control Board

M.S. Public Policy, Georgia Institute of Technology, Atlanta Georgia, 1994.

- Georgia Tech Regents Scholarship, GTRI Research Assistant, Atlanta Environmental Priorities Project, Oak Ridge Fellowship ATSDR Atlanta, GA, Cable News Network(CNN) "Earth Matters" Intern

Ph.D. Environmental Science & Public Policy, George Mason University, Fairfax VA, 1999.

- George Mason University Graduate Fellowship, UNC-Chapel Hill Minority Health Data Institute Scholarship, Research Fellow University of Georgia Savannah River Ecology Lab, Oak Ridge Fellowship ATSDR Washington, DC

Awards & Honors

Leadership America, Leadership Texas, Outstanding Texan Recognition Texas Legislative Black Caucus, Outstanding Young Women of America, Who's Who in the South & Southwest, Phi Theta Kappa Honor Society, Rho Chi Honor Society, Advisory Board Georgia Tech School of Public Policy

Associations & Committees

EPA Common Sense Initiative FACA Subcommittees on Metal Finishing, Iron & Steel, and Printing Industries, Anacostia/Congress Heights EPA Environmental Justice Small Grants Project, Society for Applied Anthropology, American Association of Colleges of Pharmacy, North American Association for Environmental Education, National Medical Association Environmental Health Task Force

Teaching Experience

Dec 98 - present Assistant Professor, Howard University School of Pharmacy

Coordinate and teach courses in health policy, research design, environmental health.

Jan 95 - present Urban Environment Institute, Howard University Continuing Education

Develop environmental & HBCU faculty development programs that involve communities, political organizations, environmental groups, & industry. HBCU GIS Workshop, University of Ghana, Legon, West Africa, May 1999.

Jun 00 – Aug 00 Visiting Scientist, M.D. Anderson Cancer Center, Center for Research on Environmental Diseases, Smithville, Texas

Developed an environmental health seminar highlighting the Center's research areas in Environmental Cancer Prevention that are applicable to healthcare professionals practices in South Central Texas.

Jun 99 - Dec 99 Visiting Scholar, EPA Office of Policy, Washington, DC

Directed Howard Student research assistant in project to determine the perception of EPA staff concerning environmental justice and public health issues.

Jan 95 - Aug 98 Faculty/Graduate Teaching Assistant, George Mason University

Taught undergraduate courses in Environmental Policy, and Public Policy Analysis. Coordinated the undergraduate internship program in Public & International Affairs.

Winter Break 1997-98 Faculty Director, The Washington Center for Internships & Seminars

Directed a two-week long academic internship program on environmental policy for 36 undergraduate juniors and seniors from five universities and colleges.

P.O. Box 8073 • Silver Spring, MD 20907 • cwarrick@howard.edu
(202) 806-4919 Office • (301) 593-5725 Home

Employment

Sep 94 - Sep 96 *Agency for Toxic Substances & Disease Registry (ATSDR), Washington, DC*
Sep 95 - Sep 96 *GIS Research Intern, US Geological Survey, Reston, Virginia*
Jan 95 - Aug 95 *Graduate Research Assistant, George Mason University*
Jan 94 - Aug 94 *Division of Health Education, ATSDR, Atlanta, Georgia*
Jan 93 - May 93 *Indoor Environment Research Program, Georgia Tech Research Institute, Atlanta, GA*
Oct 92 - Aug 94 *Fort McPherson Out Patient Pharmacy, Atlanta, Georgia*
Sep 92 - Dec 92 *Cable News Network (CNN), Atlanta, Georgia*
Aug 89 - May 92 *Pharmacist, VA Medical Center, West Los Angeles, CA*
Feb 84 - May 89 *Owner-Operator, East San Antonio Medical Center Pharmacy, San Antonio, TX*
Sep 80 - Mar 89 *Consultant Pharmacist, Ella Austin Community Health Center, San Antonio, TX*

Sponsored Research

\$19,999 - NAAEE Urban Leadership Collaboratives Initiative. "GIS Mapping in At-Risk Communities."

\$4,000 - Howard University Academic Excellence Grant. "GIS for Health Professions Faculty". A GIS training workshop for faculty in Nursing, Pharmacy, Medicine, Allied Health, Social Work, Sociology, and Engineering.

\$12,000 - EPA Office of Policy - Visiting Scholar in Environmental Justice. Community health survey for Memphis Depot Superfund Site.

\$224,187 - Army Medical Research Command. "Pharmacists as Health Risk Communicators in Prostate Cancer" training program for pharmacists.

\$40,000 - Howard University New Faculty Award. The "Health Education & Pharmacists" project will use pharmacy students to develop a health curriculum for urban middle school youth, to help them develop more healthy behaviors.

\$35,000 - Minority Health Professions Foundation/Agency for Toxic Substances and Disease Registry (ATSDR). "Mississippi Delta GIS Data Preparation Project".

Professional Papers

C. Warrick, K. Rains, T. Gilmore, D. Long-White, and J. Phillips. "The Role of the Pharmacist in Decreasing Infant Mortality Among African Americans Using the District of Columbia As A Model", submitted for publication to *Health Promotion Practice*, April 2001.

C. Warrick, S. Ragin, T. Gilmore, R. Fuchs-Young, D. Cook. "A Model for Environmental Health Education for Healthcare Professionals", submitted for publication to *Environmental Health Perspectives*, April 2001.

C. Warrick. *Regional Agreements on the Transboundary Movement of Hazardous Waste: Efforts Toward Sustainable Development*, Second International Congress on Health & Hazardous Waste, Atlanta, Georgia, June 6, 1995.

T. Tinker, C. Warrick, and J. Godec. "After the Flood: CDC Model Uses Arizona Plan", *Arizona Medicine*, Vol 6, No 5, May 1995, p 2,12. Outlines the Risk Communication plan used in the Great Salt River Cleanup.

C. Warrick. *Hazardous Waste in Atlanta*, an issue paper submitted to the Atlanta Environmental Priorities Project, an Urban Comparative Risk Project, August 1994. Mapped & categorized toxic emissions using the Toxic Release Inventory.

Conference Presentations

National Association for Equal Opportunity in Higher Education, "HBCUs & Environmental Justice", April 1996, Washington, DC.

National Conference of Black Mayors, "Brownfields Workshop", April 1996, Atlanta, Georgia.

Commission on Environmental Cooperation, Joint Public Advisory Council, "Environmental Justice in North America", July 1996, San Diego, California.

American Association of Law Schools, "Brownfields Redevelopments: Community Justice", January 1997, Washington, DC.

National Conference of Black Mayors, "State of Environmental Justice", Environmental Justice & Public Health, April 1997, St. Louis, Missouri.

Southwestern Social Science Association, Panel Presentation, "Environmental Justice and Social Policy", March 1998, Corpus Christi, Texas.

Howard University Division of Pharmacy, Environmental Education Workshop for Pharmacists, "The Role of Pharmacists in Environmental Health", May 8, 1998.

National Forum for Black Public Administrators 17th Annual Conference, Panel Presentation, "Putting Environmental Justice into Local Government Decision Making", March 1999, Austin, Texas.

CDC National Center for Health Statistics GIS & Public Health Lecture Series, "HBCU GIS Summer Faculty Workshop", October 1999, Hyattsville, Maryland.

EPA Review Panel on Children's Environmental Health, October 2000, Washington, DC.

Technical Liaison Panel, Institute of Medicine Study on Ethnic & Racial Health Disparities, Feb 2001, Wash., DC.

Inaugural Environmental Policy Conference, Ohio State University. "Case Studies of Environmental Justice Success", April 16, 2001, Columbus, Ohio.

References

Available Upon Request